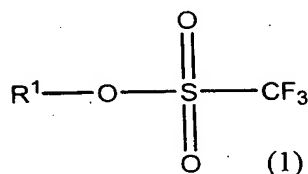


# CLAIMS

## 1. Catalytic system comprising

(a) a trifluoromethanesulfonate of general formula (1)



5 in which

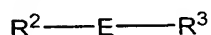
$\text{R}^1$  represents a hydrogen or deuterium atom, or a group of formula  $-\text{E}_{14}(\text{R}_{14})(\text{R}'_{14})(\text{R}''_{14})$ ;

$\text{E}_{14}$  is an element of group 14;

10  $\text{R}_{14}$ ,  $\text{R}'_{14}$  and  $\text{R}''_{14}$  represent, independently, the hydrogen, deuterium atom or one of the following substituted or non-substituted radicals: alkyl, cycloalkyl or aryl, and in which said substituent or substituents are chosen from: halo, alkyl, cycloalkyl and aryl,

as catalyst, and

(b) a (co)polymerization additive of general formula (2)



(2)

15

in which

$\text{E}$  represents an element of group 16;

$\text{R}^2$  represents a hydrogen or deuterium atom;

20  $\text{R}^3$  represents a hydrogen or deuterium atom, or a group of formula  $-\text{E}'_{14}(\text{T}_{14})(\text{T}'_{14})(\text{T}''_{14})$ ;

$\text{E}'_{14}$  is an element of group 14;

25  $\text{T}_{14}$ ,  $\text{T}'_{14}$  and  $\text{T}''_{14}$  represent, independently, the hydrogen atom; the deuterium atom; one of the following substituted or non-substituted radicals: alkyl, cycloalkyl or aryl, and in which said substituent or substituents are chosen from: halo, hydroxy, alkyl, alkoxy, cycloalkyl, cycloalkoxy, aryl, aryloxy, carboxy, alkoxycarbonyl, cycloalkoxycarbonyl and aryloxycarbonyl.

for lactide and glycolide (co)polymerization.

2. Catalytic system according to claim 1, characterized in that the quantity of (co)polymerization additive with respect to the catalyst is comprised between 0.05 and 5 molar equivalents and preferably between 0.5 and 2 molar equivalents.

5 3. Catalytic system according to one of the preceding claims, characterized in that the compound of formula (1) is such that  $R^1$  represents either a hydrogen atom or a group of formula  $-E_{14}(R_{14})(R'_{14})(R''_{14})$ .

4. Catalytic system according to claim 3, characterized in that  $R^1$  represents the hydrogen atom.

10 5. Catalytic system according to claim 3, characterized in that the compound of formula (1) is such that  $R^1$  represents a group of formula  $-E_{14}(R_{14})(R'_{14})(R''_{14})$  and  $E_{14}$  a carbon or silicon atom.

6. Catalytic system according to claim 5, characterized in that  $E_{14}$  is a carbon atom and  $R_{14}$ ,  $R'_{14}$  and  $R''_{14}$  represent, independently, a hydrogen atom or an alkyl radical.

15 7. Catalytic system according to one of the preceding claims, characterized in that the compound of general formula (2) is such that

E represents an oxygen or sulphur atom;

$R^2$  represents a hydrogen atom;

$R^3$  represents a hydrogen atom or a group of formula  $-E'_{14}(T_{14})(T'_{14})(T''_{14})$ ;

20  $E'_{14}$  is a carbon or silicon atom;

$T_{14}$ ,  $T'_{14}$  and  $T''_{14}$  represent, independently, the hydrogen atom, or one of the following substituted or non-substituted radicals: alkyl, cycloalkyl or aryl, in which said substituent or substituents are chosen from: halo, alkyl, cycloalkyl, phenyl, naphthyl, carboxy and alkoxycarbonyl.

25 8. Catalytic system according to claim 7, characterized in that

E represents an oxygen atom;

$R^2$  a hydrogen atom;

$R^3$  a hydrogen atom or a group of formula  $-E'_{14}(T_{14})(T'_{14})(T''_{14})$  in which  $E'_{14}$  represents a carbon atom and  $T_{14}$ ,  $T'_{14}$  and  $T''_{14}$  represent, independently, the

30 hydrogen atom or an alkyl radical.

9. Catalytic system according to one of the preceding claims, characterized in that the compound of general formula (2) is either water or an aliphatic alcohol.
10. Catalytic system according to one of the preceding claims, characterized in that the compound of general formula (2) is an aliphatic alcohol chosen from isopropanol and pentan-1-ol.
11. Lactide and glycolide (co)polymerization process which consists of bringing together the monomer or monomers considered, a catalytic system as defined in one of claims 1 to 10, and optionally a polymerization solvent.
12. Process according to claim 11, characterized in that the temperature is comprised between  $-20^{\circ}\text{C}$  and approximately  $150^{\circ}\text{C}$ .
13. Process according to claim 12, characterized in that the process is carried out in solution at a temperature comprised between  $0^{\circ}\text{C}$  and  $30^{\circ}\text{C}$ .
14. Process according to one of claims 11 to 13, characterized in that the reaction time is comprised between a few minutes and 48 hours, and preferably between 30 minutes and 20 hours.
15. Lactide and glycolide polymers or copolymers which can be obtained by implementing a process according to one of claims 11 to 14.